DOCUMENT RESUME

ED 263 179 TM 850 669

AUTHOR Brown, Kirk; Melnick, Daniel
INSTITUTION Library of Congress, Washington, D.C. Congressional Research Service.
TITLE Planning for the 1990 Census.
PUB DATE 30 Jan 84
NOTE 14p.
PUB TYPE Reports - Descriptive (141) -- Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Automation; *Census Figures; Federal Government; *Federal Programs; Legislation; *Program Design; *Program Implementation; Sampling

ABSTRACT

This memorandum responds to a request from the House Subcommittee on Census and Population for information concering the planning for the 1990 Census. It identifies eleven major issues concerning the implementation of the 1990 Census: (1) determination of who shall be counted; (2) provision of data for apportionment and redistricting; (3) questionnaire content; (4) use of the Postal Service; (5) use of a two-stage census; (6) use of sampling; (7) use of administrative lists; (8) automation-data processing, computer-assisted telephone interviewing, geographical mapping and procurement; (9) data processing; (10) local review; and (11) use of adjustment procedures. Provided for each issue covered is a brief description of the possible options for the 1990 Census, the dates when the Census Bureau recommends decisions should be made, and an analysis of alternative legislative proposals. The information on the proposed schedule for decisions about the procedures to be used for the 1990 Census was obtained from the Census Bureau. The specified dates are the Bureau's estimates as to when decisions should be made if the Census is to proceed efficiently. (PN)

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TO: House Subcommittee on Census and Population
Attention: George Omas

FROM: Kirk Brown and Daniel Melnick
Analysts in American National Government
Survey Research, Public Opinion and Federal
Statistics Policy Section
Government Division

SUBJECT: Planning for the 1990 Census

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SUBJECT : Planning for the 1990 Census

This memorandum responds to your request for information concerning the planning for the 1990 Census. The memorandum identifies eleven major issues concerning the implementation of the 1990 Census. For each issue covered, we provide a brief description of the possible options for the 1990 Census, the dates when the Census Bureau recommends decisions should be made, and an analysis of alternative legislative proposals.

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DETERMINATION OF WHO SHALL BE COUNTED

While the general rule used by the Census since 1790 has been that every person who resides in the Nation is counted at their residence, ambiguities in the definition of residency have been the source of many disputes. Two issues underlie these problems:

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- Where should persons be placed on the Census records when they maintain more than one residence?

- Should persons be considered as residents when there is a doubt about their legal right to reside in the U.S.?

In the past, disputes concerning the date as of which the Census is taken have centered around the issue of counting people who live in different places during different months of the year (for example, college students or migrant workers). The 1980 residency rules resulted in college students being counted where their college was located, instead of at home.

The residency rules used in the 1980 Census were designed so that all persons, including undocumented workers, were counted where they resided on Census Day. Some groups argue that illegal aliens should not be included in the population count because the Census results determine Congressional apportionment and the distribution of certain governmental assistance programs. Others contend that the Census should provide an accurate account of all persons residing in an area, regardless of their status under the law, because this information is needed to plan for the provision of services. In addition, they argue that the Census is a poor instrument for determining the legal status of persons.

The Bureau's current plan for the 1990 Census would require that the residency rules be established by January 1987. After that date, changes in these rules are likely to become more difficult because of the need to alter procedures and change the design of the questionnaire. It might be difficult to complete the extensive testing that is required if these rules are changed after the spring of 1987.

Another decision concerning who should be counted is whether the Census Bureau should use a statistical procedure termed "imputation" to add to the count persons who did not complete questionnaires. In 1980, the Bureau

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imputed the existence of persons into some households which census workers could not determine to be occupied or vacant; also, that census workers believed a household was occupied, but could not contact anyone to complete the questionnaire, persons were imputed into the household. The imputation procedures used in 1980 added 761,000 persons (283,000 households) to the population count. Currently, the legality of using population counts based on imputation procedures for apportionment is being challenged in court. 1/ By September 1985, the Census Bureau plans to determine the enumeration process it will use in the 1990 Census.

PROVISION OF DATA FOR APPORTIONMENT AND REDISTRICTING

One of the major uses of the data collected by the decennial Census is to determine the apportionment of congressional representatives and the redistricting of congressional and State legislative districts. Title 13, §141, requires that the Census Bureau provide the President with the population data necessary for apportionment within nine months of the Census Day. Within one year after the Census Day, the Bureau must provide to the States population totals for all counties, cities and specified political and statistical subdivisions. The 1980 Census provided the apportionment and redistricting counts according to schedule.

Under the provisions of P.L. 94-171, States inform the Census Bureau of the data that they will need to redraw districts after the Census results are announced. The Census Bureau plans to establish by April 1986 the criteria and schedule for States to follow in requesting data for the geographic units used in redistricting.

1/ Orr v. Baldridge, Civ. No. IP81-604-C (S.D. Ind. filed June 5, 1981).

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QUESTIONNAIRE CONTENT

The Census Bureau will begin planning the questions that will be included on the 1990 Census by compiling an inventory of user data requirements. This process is expected to be completed by June 1985, approximately a year earlier than in the previous Census cycle. If they follow procedures similar to those used before the 1980 Census, the Bureau will hold a number of public meetings and participate in the work of a Federal Interagency Committee convened by the Office of Management and Budget to provide the perspectives of other agencies.

The timing of the other phases that constitute the decisions about the data content of the 1990 questionnaire is mandated by §141 of Title 13:

- By April 1987 the Census Bureau must inform Congress of the proposed questionnaire subjects.
- By April 1988 the Census Bureau must submit the final questionnaire to the oversight Committees in Congress.

While Title 13 does not require Congressional approval of the questionnaire, or Census procedures, these reporting requirements provide an opportunity for oversight of the Bureau's plans.

USE OF THE POSTAL SERVICE

There have been many proposals to improve the coverage of the Census through the increased use of the Postal Service. GAO has recommended that since Postal Service workers are employed throughout the country and are acquainted with where persons live, they should be used in compiling or updating address lists. 2/ In 1980 the Postal Service updated the address lists under a reimbursable agreement with the Census Bureau.

2/ U.S. General Accounting Office. A $4 Billion Census in 1990? Timely Decisions on Alternatives to 1980 Procedures Can Save Millions. GGD-82-13. February 22, 1982.

The Postal Service believes that because of the language of Title 39 (Sections 411 and 412) and of the Privacy Act, 5 U.S.C. §552a (n) (1976), the use of Postal Service workers to prepare a complete list of households for the Census would require Congress to enact specific authorizing legislation. 3/ The State, Commerce and Judiciary Appropriation for 1984 (P.L. 98-166) allows the Census Bureau to conduct tests in 1984 to evaluate the effectiveness of using Postal Service workers to compile address lists. The Bureau is required to provide Congress with quarterly reports detailing the results of the tests. By September 1986, the Bureau is expected to propose plans outlining the role of the Postal Service in the 1990 Census. If the Bureau decides to use Postal Service workers to compile address lists in 1990, they would have to ask for legislation to change the provisions of Title 39. The GAO report, however, recommends that a decision about the role of the Postal Service in the 1990 Census should be determined by 1985 to allow sufficient time for planning and implementation.

USE OF A TWO-STAGE CENSUS

In 1970 and 1980, the short form questionnaire (completed by 100 percent of the respondents) and the long form (administered to a sample of persons) were distributed and collected together. One proposed method to decrease the time required to complete the population count used for apportionment and redistricting is to separate the count from the collection of information from the sample of households. Opponents of the two-stage Census argue that there would be delays between the distribution of the short and long forms creating

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3/ Ibid., p. 20-21.

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difficulties in contacting persons who may have moved since the initial count. In addition, problems might be encountered in ensuring a complete response to another Census survey conducted weeks or months after the initial count.

The Bureau plans to determine the procedures for the distribution of the Census forms, including whether to retain the current one-stage process, by September 1986.

USE OF SAMPLING

The Census Bureau is required to count all persons living in the United States. Although it uses sampling techniques to acquire data on the characteristics of the population, Title 13 prohibits the use of sampling to determine the population count on which to base Congressional apportionment. Modern estimation procedures, combined with the administrative problems in obtaining a complete count of an increasing population, have caused some experts to argue that the use of sampling would both increase the accuracy of the Census and decrease the cost. Others have argued that estimating the count from a sample would not provide the detailed counts necessary for the level of precision courts have required for determining the boundaries of congressional and State legislative districts.

Even if sampling procedures are not used for the population count, there are other possible uses for sampling. For instance, sampling methods could be employed as a means of collecting information from persons who do not return their questionnaires. Instead of attempting to locate all non-respondents, some statisticians argue that data could be collected from a sample of the non-respondents and then used to estimate the number and characteristics of all non-respondents. Proponents argue that the use of sampling procedures might

reduce the costs of the census. Opponents question the wisdom of proceeding with a major change without extensive testing.

If the Bureau's current timetable is followed, any proposed changes to Title 13 that would allow or require the use of sampling for the population count would have to occur in advance of their September 1985 deadline for determining the enumeration process for the 1990 Census. Decisions regarding the use of sampling techniques for follow-up or vacancy checks will be made by mid-1987.

USE OF ADMINISTRATIVE LISTS

In 1980, the Census Bureau used commercial mailing lists to help compile the address file used in mailing the questionnaires. The Bureau is considering several proposals to use administrative lists in compiling an address file and in assessing the extent of any possible undercount. Using administrative lists raises two issues Congress might consider.

First, some statisticians argue that if administrative lists are used, similar procedures need to be followed throughout the Nation. Yet the Bureau sometimes faces problems obtaining lists (or comparable lists) from local government agencies. Advocates of using the information argue that Federal law should give the Bureau the authority to obtain lists it needs for the census. Opponents question the implications of such legislation for the privacy of personal data.

Second, in 1980, local jurisdictions sometimes argued that the Bureau should be required to use locally generated administrative lists. Proponents contend that such lists could rectify inadequacies in the count. Opponents point to difficulties verifying the lists and reconciling them with the Census.

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Others have proposed that administrative lists, for example utility company records, could be used to compile some of the information currently collected on the Census forms. Another proposed use for administrative lists is to verify whether the Census received completed questionnaires from all persons living in a particular area. This is called "coverage improvement."

A decision will have to be made whether to follow the 1980 procedures and purchase commercial mailing lists, or whether lists compiled for the 1980 Census can be updated. The GAO also has recommended that in 1990 the Census Bureau update the 1980 lists, rather than compile new lists. 4/

The selection of lists to be used in the compilation of the address file is expected to be completed by February 1986. Decisions regarding the possible uses of administrative lists to improve coverage are planned to be completed by June 1987.

AUTOMATION: DATA PROCESSING, CATI, GEOGRAPHICAL MAPPING AND PROCUREMENT

Advances in the technology that can be used in collecting and processing the data may improve both the accuracy and cost-efficiency of the 1990 Census. New technologies that the Bureau is considering for the 1990 Census include: automation of data collection efforts, computer-assisted telephone interviewing (CATI) and computerized mapping systems.

Increased reliance on automation could improve the efficiency of the management of data collection activities. For instance, a automated check-in procedure might be used to improve tracking which Census forms have been returned. Decentralized data processing at district offices could be considered

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4/ Ibid., p. 11-26.

if the current FOSDIC system was replaced with mark-scanning devices. Automation might also reduce the necessity for clerical coding of returned Census forms. The use of a data base with a dictionary of terms corresponding with codes might be employed to replace manual coding. In late 1984 the Census Bureau plans to begin consideration of alternative technologies that could be used in the management of data collection activities in the 1990 Census. Final decisions are scheduled for September 1986

Another possible function of automation in the Census is computer-assisted telephone interviewing. With CATI the interviewer telephones the respondent, reads the questions from the computer screen and enters the responses directly into the computer. CATI reduces the need for field work and for data entry. Supporters of CATI propose that it be used as a means of following-up persons who do not return their questionnaires or checking problems in returned questionnaires. A final decision regarding the technologies to be used in the 1990 Census is expected by September 1986.

For the 1990 Census the Census Bureau is planning to implement a computerized Geographic Support System. The automated geographic system is designed to reduce the inconsistencies and errors in the 1980 geographic materials. The system would be most effective if it could be developed to cover all areas of the country by the 1990 Census. By September 1985 the Census Bureau plans to determine the areas where it will be able to produce computerized maps and geographic files for 1990, and propose alternative plans for the other areas.

The introduction of new automated equipment for use in the decennial Census causes several problems. First, the technologies that are used must be designed so that the temporary field staff with little training can use the machines. Second, the current procurement procedures may inhibit the Census Bureau from

timely purchase of the latest products. Increased reliance on purchasing "off-the-shelf" equipment might better enable the Census Bureau to benefit from technological advances. A special procurement authority, however, would have to be obtained by the Census Bureau to permit independent procurement of automated equipment or to decrease the amount of time required to complete a procurement action.

The Grace Commission report advocates that the Census Bureau be exempted from A-109 procurement guidelines. It estimates that a waiver of A-109 regulations would save the Census Bureau approximately $15 million over the next three years. 5/

DATA PROCESSING

In 1980, the data processing (reviewing, coding and machine reading of the questionnaires) was conducted at three sites. In the 1970 Census, however, all processing was conducted at one site. According to George Hall, former Associate Director for Demographic Fields, one reason for the limited number of processing sites is the sensitivity of the census form scanning device (FOSDIC) to environmental conditions. Since the FOSDIC machines need to operate in an environment where the temperature and humidity are precisely regulated, decentralized data processing using FOSDIC is not feasible. With different scanning devices, such as mark scanning, it might be possible to process the forms at a larger number of offices. Another problem in the data processing of the 1980 census forms was hiring enough qualified persons at the Laguna, California and New Orleans sites to supervise the data processing and to code the data.

5/ President's Private Sector Survey on Cost Control. Report on the Department of Commerce. Spring-Fall 1983. p. 33-43.

By April 1987, the Census Bureau is planning to determine how many processing sites should be used during the 1990 Census. The Census Bureau is also considering alternative technologies to FOSDIC to use in the processing of the 1990 Census forms.

LOCAL REVIEW

In 1980, the Census Bureau instituted a program of local review that was composed of two phases: pre-census and post-census reviews. In the pre-census review local governments were to have been provided with preliminary maps and household counts and be given ten days to suggest any modifications. The post-census review, when localities would be informed of the population counts was scheduled to occur after the second follow-up, but before the local offices closed. Problems with mapping and the household counts forced the Census Bureau to cancel the pre-census review. In place of the pre and post-census review, the Bureau decided to implement a mid-census review. Under this procedure, localities were given household and population counts before the second follow-up and asked to provide any modifications. In general, the localities were of more assistance in locating household that had been missed in the initial counts, than in providing information on errors in the population counts.

The Census Bureau is currently considering alternative plans for the 1990 Census local review program and a decision should be made before January 1987. In addition to proposals for involving local governments in verifying the household and population counts, several suggestions have been made for the increased use of administrative lists to improve coverage (see above).

USE OF ADJUSTMENT PROCEDURES

A number of the lawsuits brought in response to the 1980 Census results have raised the question of adjustment. Adjustment techniques would enable the Census Bureau to use information gathered by replications of the survey with a sample of households or matching against administrative records to estimate and correct any errors in the original data. In 1980, the Census Bureau did not use any adjustment techniques. The Bureau, however, does have an adjustment staff that is exploring possible uses of adjustment techniques in future censuses.

A decision whether the 1990 Census will use adjustment techniques is scheduled to be made by September 1985. If adjustment will be used, the actual techniques will be determined by June 1987.

The issues discussed in this memorandum highlight a few of the major decisions that will determine the procedures used in the 1990 Census. The dates indicated in the memorandum are those by which the Census Bureau believes final decisions should be made for the planning for the Census to proceed on schedule. The actual discussion of alternative policies will occur in advance of these dates.

We trust that this memorandum meets your needs. If we may be of further assistance, please contact Daniel Melnick at 287-8640.

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